

Amendment
Serial No. 10/024,779

Docket No. GB000177

IN THE CLAIMS:

1. (currently amended) A method of synchronising the hop sequences of frequency hopping radio transceivers, comprising
transmitting from a first transceiver a first message at least once on each of a first plurality of radio channels selected sequentially according to a first sequence at a first rate;

receiving in a second transceiver on simultaneous combinations of radio channels, said combinations having been selected sequentially from a second plurality of radio channels according to a second sequence at a second rate, wherein the first and second plurality of radio channels have at least partial commonality, said radio channels of a simultaneous combination from among said combinations being received, in said receiving, simultaneously; and,

in response to receiving at the second transceiver the first message on any of the second plurality of radio channels, transmitting from the second transceiver a second message and aligning the hop sequences of the first and second transceivers.

2. (currently amended) A method as claimed in claim 1, wherein ~~the simultaneous combinations of radio channels comprise simultaneous combinations of~~ said simultaneous combination constitutes two radio channels.

3. (currently amended) A method as claimed in claim 2, wherein said second sequence has a period, said two radio channels being mutually separated by the ~~simultaneous combinations of two channels comprise channels selected from the second sequence and from positions in the second sequence separated by around half the~~ said period of the second sequence.

4. (currently amended) A method as claimed in claim 1, further comprising a receiver of the second transceiver mixing N ($N > 2$) radio channels to respective IF frequencies, tuning each of a plurality less than N of IF filters (12, 13) to selected ones of

Amendment
Serial No. 10/024,779

Docket No. GB000177

the IF frequencies corresponding to ~~one of the simultaneous combinations of said~~ radio channels of said simultaneous combination, receiving the first message via any of the IF filters, and demodulating the first message thereby received.

5. (previously presented) A method as claimed in claim 1, further comprising switching the second transceiver into a single-channel-at-a-time reception mode in response to receiving the first message.

6. (original) A radio receiver for use in the method claimed in claim 1, comprising means for frequency hopping through a sequence of radio channels, means for simultaneous reception on a plurality of radio channels,
means for demodulating a first message received on any of the plurality of radio channels, and
means for transmitting a second message in response to receiving the first message.

7. (original) A radio receiver as claimed in claim 6, comprising
a front end (2, 3) capable of receiving a radio signal on each of N ($N > 2$) radio channels simultaneously,
means (4, 5, 6, 7) for mixing simultaneously each of the N radio signals to respective IF frequencies,
a plurality less than N of IF filters (12, 13),
means (16) for tuning each of the plurality of IF filters to selected ones of the IF frequencies, and
means (14, 15) for demodulating at least one signal received via at least one of the IF filters.

8. (original) A radio receiver as claimed in claim 7, wherein at least one respective IF frequency is a low IF.

Amendment
Serial No. 10/024,779

Docket No. GB000177

9. (original) A radio receiver as claimed in claim 8, wherein the IF filter (14, 15) tuned to the at least one low IF is a polyphase filter.

10. (previously presented) A radio receiver as claimed in claim 8, wherein at least one signal received via the at least one low IF is de-rotated to zero frequency prior to demodulation.

11. (original) A radio receiver as claimed in claim 7, wherein at least one respective IF frequency is zero.

12. (previously presented) A radio receiver as claimed in claim 6, comprising control means operable to invoke a single-channel-at-a-time reception mode in response to receiving a predetermined message.

13. (previously presented) A radio receiver as claimed in claim 6, further comprising control means (16) for selecting for further processing a signal from among a plurality of simultaneously received signals.

14. (previously presented) An integrated circuit comprising a receiver as claimed in claim 6.

15. (previously presented) A transceiver comprising a receiver as claimed in claim 6.

16. (new) The method of claim 1, wherein a hop rate of said first sequence differs from that of said second sequence.

17. (new) A method of synchronizing hop sequences of frequency hopping radio transceivers, comprising

Amendment
Serial No. 10/024,779

Docket No. GB000177

transmitting from a first transceiver a first message at least once on each of a first plurality of radio channels selected sequentially according to a first sequence at a first rate;

sequentially selecting, from a second plurality of radio channels according to a second sequence at a second rate, different combinations of radio channels, of which a current combination is one, the first and second plurality of radio channels having at least partial commonality;

receiving, in a second transceiver, simultaneously on the radio channels of said current combination; and,

in response to receiving at the second transceiver the first message on any of the second plurality of radio channels, transmitting from the second transceiver a second message and aligning hop sequences of the first and second transceivers.

18. (new) A radio receiver comprising:

means for frequency hopping through a sequence of radio channels, means for synchronizing hop sequences with a transmitter by simultaneous reception on a combination of radio channels that are selected from a plurality of radio channels such that the combination changes over time according to said hopping,

means for demodulating a first message received on any of the plurality of radio channels, and

means for transmitting a second message in response to receiving the first message.

19. (new) The receiver of claim 18, wherein the frequency hopping means, while hopping through said sequence, simultaneously hops through another sequence of radio channels, the changing over time occurring in synchrony with the simultaneous hopping.

20. (new) The receiver of claim 18, wherein said plurality of radio channels is a second plurality, the reception means receiving a first message that is being transmitted at

Amendment
Serial No. 10/024,779

Docket No. GB000177

least once on each of a first plurality of radio channels, wherein the first and second plurality of radio channels have at least partial commonality.